Listing of Claims:

1. (CURRENTLY AMENDED) An array comprising a plurality of individual microchannels for capturing an individual cell therein, wherein each individual microchannel includes an entry portion for receiving said cell and an exit portion that said cell may pass through, wherein the plurality of microchannels are arranged in rows and columns and wherein there are at least two rows and at least two columns, wherein the exit portion of each individual microchannel faces the entry portion of the microchannel in a successive row., ~~wherein plurality of microchannels is a plurality of wedge shaped microchannels, wherein a cell enters the wider end of the wedge-shaped microchannel and is trapped as it traverses the microchannel, or the plurality of microchannels comprises at least a first and a second set of microchannels, said first set having a first cross-sectional area and said second set having a second cross-sectional area, said first cross section area being larger than said second cross-sectional area, whereby said first and second sets of microchannels are arranged to form a gradient for capturing said cell, or the plurality of microchannels has a geometric shape that traps the said cell as it traverses the microchannel, thereby trapping the cell in a microchannel such that the cell does not leave the microchannel but is constrained by its shape to remain in the microchannel.~~

2. (CANCELED)

3. (CURRENTLY AMENDED) The array of claim 1, wherein said microchannels ~~are wedge-shaped and~~ each have a depth of 0.8 to 6.0 microns, a length of between ~~about~~ 10 microns to ~~about~~ 210 microns, said length including an entry portion for receiving said individual cell and an exit portion that said individual cell may pass through, said entry portion having an entry width of between 2.5 microns to ~~about~~ 25 microns, and said exit portion having an exit width of between ~~about~~ 0.5 microns to ~~about~~ 7 microns.

4. (CURRENTLY AMENDED) The array of claim 1, ~~comprising a plurality of microchannels for capturing an individual cell therein~~, wherein said microchannels are wedge-shaped, wherein the wedge shaped microchannelss have a three dimensional entry portion that is wider than a three dimensional exit portion.

5. (CURRENTLY AMENDED) The array of claim 3, wherein said length is ~~about 60~~ between 50 and 70 microns, said entry width is ~~about 3.7~~ between 3.5 and 4.0 microns, and said exit width is ~~in about 1.5~~ between 1.0 and 2.0 microns and depth of ~~about~~ between 3.2 and 3.6 ~~3.4~~ microns.

6. (CURRENTLY AMENDED) The array of claim 3, wherein said length is ~~about 35~~ between 30 and 37 microns, said entry width is ~~about 3.6~~ between 3.4 and 3.8 microns, and said exit width is ~~about 1.4~~ between 1.2 and 1.6 microns.

7. (CURRENTLY AMENDED) The array of claim 3, wherein said length is ~~about 100~~ between 95 and 105 microns, said entry width is ~~about 4.5~~ between 4.3 and 4.7 microns, and said exit width is ~~about 1.5~~ between 1.3 and 1.7 microns.

8. (CURRENTLY AMENDED) The array of claim 3, wherein said length is ~~about 16~~ between 14 and 18 microns, said entry width is ~~about 3.6~~ between 3.4 and 3.8 microns, and said exit width is ~~about 1.4~~ between 1.2 and 1.6 microns.

9. – 11. (CANCELED)

12. (CURRENTLY AMENDED) The array of claim 1, further comprising shunt channels, wherein said shunt channels comprise individual microchannels arranged in at least one row and at least two columns, wherein said microchannels are adapted to allow said cell to enter the entry portion and exit the exit portion in order to bypass an individual microchannel occupied with a cell. ~~region of said microchannels.~~

13. (CURRENTLY AMENDED) The array of claim 12, wherein said shunt channels have a length of between ~~about~~ 10 microns ~~to about~~ and 100 microns.

14. (ORIGINAL) The array of claim 1, wherein said microchannels have cross-sectional dimensions adapted to temporarily deform a cell passing therethrough.

15. (ORIGINAL) The array of claim 1, further comprising a means for moving said cells through said microchannels.

16. (ORIGINAL) The array of claim 15, wherein said means for moving said cells through said microchannels comprises a vacuum pump for pulling said cell through said microchannels, negative pressure generated by connected water columns, or a peristaltic pump for driving said cell through the channels.

17. (ORIGINAL) The array of claim 1, wherein said microchannels have dimensions on the same scale as human capillaries.

18. - 46. (CANCELED)

47. (NEW) A gradient array for analyzing a plurality of cells comprising at least three rows of microchannels and at least two columns of microchannels, wherein the microchannels have an

entry portion for receiving cells and an exit portion whereby cells may pass through, wherein the exit portion of the microchannels in the first row face the entry portion of the microchannels in a second row and the exit portion of the microchannels in the second row face the entry portion of the microchannel in a third row, and wherein the width of the microchannels in the first row is wider than the cells to be analyzed such that cells enter the entry portion and exit the exit portion of the microchannels in the first row and enter the entry portion of the microchannels in the second row, and wherein the microchannels in the first row have a first width which is larger compared to the width of the microchannels in the second row, wherein cells are either trapped within a microchannel in the second row or pass through the exit portion of the microchannel in the second row and enter the entry portion of the microchannel in the third row, wherein cells that pass through the exit portion of the second row enter the entry portion of the microchannels in the third row.

48. (NEW) The array of claim 1, wherein the dimensions of the wedge-shaped microchannel are defined by area and volume, wherein the area and volume of a cell are known and the length, width and height of the microchannel is varied so that a target blood cell may enter, but not exit.

49. (NEW) An array comprising a plurality of individual microchannels for capturing an individual cell therein, wherein each individual microchannel includes an entry portion for receiving said cell and an exit portion that said cell may pass through, wherein the plurality of microchannels are arranged in rows and columns and wherein there are at least two rows and at least two columns, wherein the exit portion of each individual microchannel faces the entry portion of the microchannel in a successive row, wherein each individual microchannel is a wedge shape, wherein the wedge shaped microchannels have a three dimensional entry portion that is wider than a three dimensional exit portion.

50. (NEW) The array of claims 4 or 49, wherein the microchannel has an area that is similar to the area of a human capillary.

51. (NEW) The array of claims 4 or 49, further comprising a column of individual microchannels wherein the microchannels have an area that is larger than the area of a human capillary so that cells may enter the entry portion and exit the exit portion.

52. (NEW) A micropipette array for analyzing a plurality of cells comprising a plurality of non-wedge shaped and wedge shaped microchannels arranged in at least three rows and at three columns, wherein the microchannels have an entry portion for receiving cells and an exit portion whereby cells may pass through, wherein the exit portion of the microchannels in the first row

face the entry portion of the microchannels in a second row and the exit portion of the microchannels in the second row face the entry portion of the microchannel in a third row, and wherein the microchannels in the first row are non-wedge shaped and have an entry and exit portion that is wider than the cell to be analyzed and wherein the cell enters the entry portion, exits the exit portion and enters the entry portion of the microchannels in the second row, wherein the microchannels in the second row and any successive row are a combination of wedge shaped and non-wedge shaped, wherein the wedge shaped microchannels have a three dimensional entry portion that is wider than a three dimensional exit portion and wherein the area of the wedge-shaped microchannel is similar to the area of a human capillary, and wherein the non-wedge shaped microchannels in the same row have an area that is wider than the cell to be analyzed.

53. (NEW) The array of claim 52, wherein the wedge shaped microchannel have an entry portion that is larger than a human capillary and an exit portion that is smaller than a human capillary.